Extended Abstract
Metacognitive Approach to Smoking Dependency: A Review of the Current Literature

Introduction

Tobacco and its products are public health threats and have caused more than eight million deaths. According to the World Health Organization Global Tobacco Epidemic Report, smoking has become much more difficult since 2008 because of the regulations made in accordance with health policies. However, in 2017, 29.5% of individuals over 15 years old, 42% of men, and 16.9% of women used tobacco products in Turkey.

The metacognitive approach, one of the third wave psychotherapy approaches, demonstrates evidence of the initiation, perpetuation, and relapse of cigarette use behavior as well as the mechanisms of smoking dependency. Metacognitions are cognitions about cognitions. The approach emphasizes the reciprocal and causal relationships among multiple components, including cognitions, metacognitions, attention control, associated processes, and self-regulation. The approach is based on the self-regulatory executive functions (S-REF) model, accepted as transdiagnostic, and proposes that psychological disorders can be perpetuated because of a biased attention pattern called cognitive attentional syndrome, in which common negative emotions and thoughts transform into perpetuating patterns.

The metacognitive approach presents a specific frame to psychological disorders classified as "Substance Related and Addictive Disorders" and the behavioral addictions in Section III-"Conditions for Further Study" of the DSM-5. The number of studies that have empirically examined the propositions of the metacognitive models for addictive disorders has been increasing in the relevant literature. Although a smoking-specific model of the metacognitive approach has not been proposed, studies that have examined the relationship between smoking and metacognition have gained pace with the development of a smoking-specific metacognition scale. In the present study, these studies are examined under three subtitles: metacognition in cigarette use, metacognitions peculiar to smoking, and metacognitions in smoking cessation. Within the framework of these findings, the current position of the metacognitive approach in the literature on smoking dependency and possible contributions to the treatment of this addiction are discussed.

Method

In relation to the aim of this study, the ScienceDirect, Web of Science, EbscoHost, and MedLine databases were scanned for English language publications. Without limiting the publication years, the keywords of "smoking," "smoking dependency," "smoking addiction," "nicotine," "nicotine use," "nicotine dependency," "nicotine

addiction," "tobacco," and "tobacco use," which were coupled with the keywords of "metacognition" and "metacognitive," were searched by using 36 different combinations. Databases were scanned in September 2019, and eight cross-sectional and longitudinal empirical studies were included in this review.

Results

Many studies have assessed the relationship between smoking dependency and anxiety disorders and depression. Although depression and anxiety levels are higher in individuals with smoking dependency compared with those of nonsmokers, individuals with anxiety disorders and depression also have higher levels of cigarette use compared with individuals without these diagnoses. In one pioneer study, researchers found that metacognitive beliefs partially mediated the relationship between smoking dependency and depression/anxiety symptoms. Following these findings, it was demonstrated that metacognitive beliefs differentiated the high-level smokers from low-level smokers and nonsmokers. Additionally, beliefs about the need to control thoughts predicted smoking dependency independently from depression and anxiety symptoms.

Similar to those in all the metacognitive formulations for the particular disorders, metacognitions specific to smoking dependency have also been investigated. Accordingly, the Metacognitions about Smoking Questionnaire (MSQ) was developed through semi-structured interviews that had a four-factor structure: (1) positive metacognitions about cognitive regulation, (2) positive metacognitions about emotion regulation, (3) negative metacognitions about uncontrollability, and (4) negative metacognitions about cognitive interference. Additionally, empirically support indicated that metacognitions about smoking explained the variance in smoking above and beyond the variance explained by cognitions about smoking. The adaptation of MSQ into Turkish and Persian further revealed that metacognitions about smoking had a cross-cultural validity.

The relationship with smoking cessation and metacognitive processes was also investigated because addiction is a resistant mechanism that progresses through quit and relapse patterns. It is suggested that evaluating craving-related beliefs during the smoking cessation process may facilitate understanding the continuation of smoking behavior (relapse) after the decision to quit smoking. Longitudinal research has revealed that when individuals attempt to quit; provide personal, negative, and catastrophizing meaning to; and care about controlling their cravings, they experience it as more disturbing and personally meaningful and as continuous cravings. Moreover, such evaluations have been found to significantly predict relapse within one month, even after controlling for very strong predictors, namely smoking status, number of years of regular smoking, number of attempts to quit, craving severity, and confidence in successfully quitting smoking.

Discussion

This study aimed to examine smoking dependency from the viewpoint of the metacognitive approach and evaluate the current situation of metacognitive psychotherapy as an alternative treatment of choice for smoking addiction. Empirical evidence demonstrated that metacognitions contributed to further understanding the link between smoking and mood problems as well as explaining the degree of addiction above and beyond the contribution of cognitions conceptualized as expectations from smoking. According to the metacognitive model of smoking dependency, smokers exhibit smoking behavior as a form of dysfunctional coping with the symptoms of depression and anxiety, and cognitive and emotional positive metacognitions play a critical role in choosing this coping strategy. By contrast, they smoke repeatedly to renew the diminishing effect of nicotine within each 30–40 minutes. As tolerance develops, obtaining the desired effect becomes more difficult, and the amount of cigarette consumption gradually increases. Intrinsically, negative metacognitive beliefs are caused by both the uncontrolled use of smoking and cognitive disability arising from constant smoking. Thus, disturbing symptoms such as depression and anxiety reappear, and in turn, the cycle of addiction promotes increases in smoking. When the smoker wants to quit smoking at some point, the negative metacognitive beliefs against the cravings emerge, resulting in symptoms of depression and anxiety. Choosing smoking as a dysfunctional coping strategy to soothe negative effects leads to catastrophizing cravings in times of withdrawal and negative self-evaluations, resulting in smoking one more time and thus contributing to the relapse mechanism of the smoking addiction. The findings strengthened the view that transdiagnostic concepts of the metacognitive approach provide a meaningful frame to explain smoking dependency.